



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,467	12/12/2003	Chandrakant D. Patel	200209754-1	4316
22879	7590	12/29/2005	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			DATSKOVSKIY, MICHAEL V	
			ART UNIT	PAPER NUMBER
			2835	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/735,467

Applicant(s)

PATEL, CHANDRAKANT D.

Examiner

Michael V. Datskovskiy

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 12-23 is/are rejected.
- 7) ☒ Claim(s) 7-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 03/15/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 12-16 and 20-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Weiss.

Weiss teaches an apparatus (means), Figs. 1-5, for cooling a plurality of assemblies 3, comprising: an enclosure 13 configured to form a plurality of tiers 2 stacked in a longitudinal dimension, the plurality of tiers including a first tier 1, wherein each tier of the plurality of tiers has opposite first and second longitudinal ends with respect to the longitudinal dimension, wherein each tier is configured to support one or more assemblies 3 of the plurality of assemblies; and wherein the enclosure defines a distribution plenum 23 contiguous to the first longitudinal end of the first tier, the distribution plenum being configured to distribute received coolant through the first longitudinal end of the first tier. Weiss teaches furthermore said apparatus, wherein the enclosure further defines an exhaust plenum 22 contiguous to the second longitudinal end of the first tier, the exhaust plenum being configured to channel away coolant received from the second longitudinal end of the first tier, said apparatus further comprising a pump (air circulator) configured to pump coolant such that it passes sequentially through the distribution plenum, the tier, and the exhaust plenum. It is also inherent that said apparatuses pump configured to raise the pressure within the

distribution plenum with respect to the pressure within the exhaust plenum. Weiss teaches furthermore said apparatus, wherein the one or more assemblies that the first tier is configured to support comprise a plurality of planar cards 3 stacked laterally, with respect to the longitudinal dimension, across the first tier, wherein the distribution plenum includes a wall 9 defining a boundary between the distribution plenum and the first longitudinal end of the first tier, the wall including a plurality of orifices 16 configured to direct coolant received by the distribution plenum through the first tier at selected locations. Weiss also teaches apparatus, wherein the plurality of orifices are configured as slot formed jets 44, said direct streams of coolant toward the plurality of assemblies

3. Regarding to claims 20-21: The method steps are necessitated by the device structure as Wong discloses it.

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6 and 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Wong (US Patent 6,611,428).

Wong teaches an apparatus (means) 100, Figs. 1-2, for cooling a plurality of assemblies 114, comprising: an enclosure configured to form a plurality of tiers 108 stacked in a longitudinal dimension, the plurality of tiers including a first tier 108, wherein each tier of the plurality of tiers has opposite first and second longitudinal ends with respect to the longitudinal dimension, wherein each tier 108 is configured to support one or more

Art Unit: 2835

assemblies 114 of the plurality of assemblies; and wherein the enclosure defines a distribution plenum 110 contiguous to the first longitudinal end of the first tier 108, the distribution plenum being configured to distribute received coolant through the first longitudinal end of the first tier. Wong teaches furthermore said apparatus, wherein the enclosure further defines an exhaust plenum 112 contiguous to the second longitudinal end of the first tier, the exhaust plenum being configured to channel away coolant received from the second longitudinal end of the first tier, said apparatus further comprising a pump 118 configured to pump coolant such that it passes sequentially through the distribution plenum, the tier, and the exhaust plenum. Wong also teaches said apparatus, wherein the enclosure is configured such that coolant supplied to the distribution plenum is received laterally into the enclosure with respect to the longitudinal dimension, and such that coolant received by the exhaust plenum is channeled laterally out of the enclosure with respect to the longitudinal dimension. It is also inherent that said apparatuses pump configured to raise the pressure within the distribution plenum with respect to the pressure within the exhaust plenum. Regarding to claims 20-21: The method steps are necessitated by the device structure as Wong discloses it.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2835

5. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss.

Weiss teaches all the limitations of the claims except said jets emit coolant at a velocity of at least 4m/s (claim 17); or 6m/s (claim 18); or at least 6m/s and no more than 8 m/s (claim 19). It would have been obvious to one having ordinary skill in the art at the time invention was made to use air fan(s) creating such a range of air velocity, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Allowable Subject Matter

6. Claims 7-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The apparatus of claim 1, wherein the enclosure further defines a separate distribution plenum for each tier, each distribution plenum being contiguous to the first longitudinal end of its respective tier, and being configured to distribute received coolant through the first longitudinal end of its respective tier.

8. The prior art made of record provided in the PTO Form 892 and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2835

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V. Datskovskiy whose telephone number is (571) 272-2040. The examiner can normally be reached on 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael V Datskovskiy
Primary Examiner
Art Unit 2835

12/21/2005